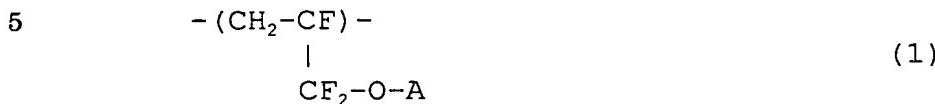


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AIA 341407

CLAIMS

1. A fluorine-containing allyl ether polymer having a number average molecular weight of 1,000 to 1,000,000 and consisting of chains of at least one repeating unit of the formula:



wherein A is an organic group having 1 to 100 carbon atoms.

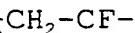
2. The fluorine-containing allyl ether polymer according
10 to claim 1, wherein at least one of the repeating units is a
repeating unit of the formula:



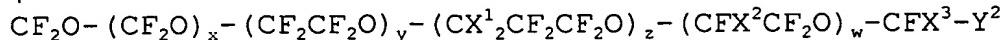
15 wherein A^1 is a divalent organic group having 1 to 60 carbon atoms,
and Y^1 is $-\text{CH}_2\text{OH}$, $-\text{COOH}$, $-\text{COOR}^1$ in which R^1 is a hydrocarbon group
having 1 to 20 carbon atoms, $-\text{CON}^{R^2}_{R^3}$ in which R^2 and R^3 are the
20 same or different and a hydrogen atom or a hydrocarbon group
having 1 to 20 carbon atoms, $-\text{O}-\text{CF}=\text{CF}_2$, or $-\text{OCO}-\text{CZ}^3=\text{CZ}^1\text{Z}^2$ in which
 Z^1 and Z^2 are the same or different and a hydrogen atom or a fluorine
atom, and Z^3 is a hydrogen atom, a fluorine atom, a chlorine atom
or a trifluoromethyl group.

25 3. The fluorine-containing allyl ether polymer according
to claim 2, wherein A^1 in the formula (2) is a fluoroalkylene
group having 1 to 60 carbon atoms or a fluoroalkylene group having
an ether bond and 1 to 60 carbon atoms.

SAC ~~4.~~ 4. The fluorine-containing allyl ether polymer according
30 to claim 1, wherein at least one of the repeating units is a
repeating unit of the formula:



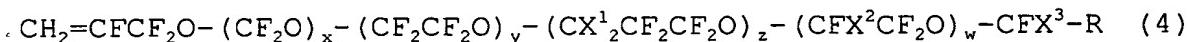
(3)



wherein X^1 is a hydrogen atom, a fluorine atom or a chlorine atom,

- 5 X^2 is a hydrogen atom, a chlorine atom, a methyl group or a trifluoromethyl group, X^3 is a hydrogen atom, a fluorine atom, a chlorine atom or a trifluoromethyl group, x , y , z and w are the same or different and a number of 0 to 20 provided that the sum of x , y , z and w is from 1 to 20, and Y^2 is $-\text{COOH}$, $-\text{COOR}^4$ in
10 which R^4 is a hydrocarbon group having 1 to 20 carbon atoms, $-\text{CH}_2\text{OH}$,
 $-\text{CON}<\begin{matrix} \text{R}^5 \\ \text{R}^6 \end{matrix}$ in which R^5 and R^6 are the same or different and a hydrogen atom or a hydrocarbon group having 1 to 20 carbon atoms, $-\text{O}-$
15 $\text{CF}=\text{CF}_2$, or $-\text{OCO-CZ}^6=\text{CZ}^4\text{Z}^5$ in which Z^4 and Z^5 are the same or different and a hydrogen atom or a fluorine atom, and Z^6 is a hydrogen atom, a fluorine atom, a chlorine atom or a trifluoromethyl group.

5. A fluorine-containing allyl ether polymer represented
20 by the formula:



- wherein X^1 is a hydrogen atom, a fluorine atom or a chlorine atom, X^2 is a hydrogen atom, a chlorine atom, a methyl group or a trifluoromethyl group, X^3 is a hydrogen atom, a fluorine atom, a chlorine atom or a trifluoromethyl group, x , y , z and w are the same or different and a number of 0 to 20 provided that the sum of x , y , z and w is from 1 to 20, and R is $-\text{COOH}$, $-\text{COOR}^1$ in which R^1 is a hydrocarbon group having 1 to 20 carbon atoms, $-\text{CH}_2\text{OH}$, $-\text{CONH}_2$, $-\text{CF}=\text{CF}_2$, a hydrocarbon group having 1 to 20 carbon atoms
25 or a perfluoroalkyl group having 1 to 20 carbon atoms.
30

6. The fluorine-containing allyl ether polymer according

to claim 5, which has a number average molecular weight of 1,000 to 1,000,000.